

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

CONTINENTAL CIRCUITS LLC and
CONTINENTAL CIRCUITS OF TEXAS
LLC,

Plaintiffs,

v.

ADVANCED MICRO DEVICES, INC.,

Defendant.

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Case No. 6:21-cv-00539

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Continental Circuits LLC (“Continental LLC”) and Continental Circuits of Texas LLC (“Continental Texas”) (collectively, “Continental Circuits” or “Plaintiffs”) file this Complaint against Defendant Advanced Micro Devices, Inc. (“AMD” or “Defendant”), for patent infringement under 35 U.S.C. § 271 and allege as follows:

THE PARTIES

1. Plaintiff Continental Circuits LLC is a limited liability company organized and existing under the laws of the State of Arizona, with its principal place of business located at 16800 East El Lago Boulevard, Unit 2042, Fountain Hills, Arizona 85268.

2. Plaintiff Continental Circuits of Texas LLC is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 100 W. Houston Street, Marshall, Texas 75670.

3. Upon information and belief, AMD is a Delaware corporation with a place of business at 7171 Southwest Parkway, Austin, Texas 78735. Upon information and belief, AMD does business in Texas and in the Western District of Texas, directly or through intermediaries.

JURISDICTION

4. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has personal jurisdiction over Defendant. Defendant conducts business and has committed acts of patent infringement in this Judicial District, the State of Texas, and elsewhere in the United States.

6. Upon information and belief, Defendant transacts substantial business in the State of Texas and this Judicial District. Defendant has committed acts of infringement in this District by, among, other things, manufacturing, distributing, offer for sale, and selling products that infringe the asserted patents, including the accused devices as alleged herein. Upon information and belief, Defendant, directly or indirectly participates in the stream of commerce that results and has resulted in products, including the accused products, being made, used, offered for sale, and/or sold in the State of Texas and/or imported into the United States to the State of Texas.

7. Defendant has a physical place of business within this District including, but not limited to: 1717 Southwest Parkway, Austin, Texas 78735.

8. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant has transacted business in this Judicial District and has committed acts of direct and indirect infringement in the Western District of Texas.

PATENTS-IN-SUIT

9. On March 10, 2009, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,501,582 (the “’582 Patent”) entitled “Electrical Device and Method for Making Same.” A true and correct copy of the ’582 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=07501582>.

10. On October 2, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,278,560 (the “’560 Patent”) entitled “Electrical Device with Teeth Joining Layers and Method for Making the Same.” A true and correct copy of the ’560 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=08278560>.

11. On November 12, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,581,105 (the “’105 Patent”) entitled “Electrical Device with Teeth Joining Layers and Method for Making the Same.” A true and correct copy of the ’105 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=08581105>.

12. On June 21, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,374,912 (the “’912 Patent”) entitled “Electrical Device with Teeth Joining Layers and Method for Making the Same.” A true and correct copy of the ’912 Patent is available at: <https://pdfpiw.uspto.gov/.piw?Docid=09374912>.

13. Continental LLC is the sole and exclusive owner of all right, title, and interest of the ’582, ’560, ’105, and ’912 Patents (collectively, the “Patents-in-Suit”). Continental Texas is the exclusive licensee with respect to the Patents-in-Suit in Texas and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit in Texas, including the filing of this patent infringement lawsuit. Continental Texas has the right to recover all damages for past infringement of the Patents-in-Suit in the State of Texas as appropriate under the law. Continental LLC has the right to recover all damages for past infringement of the Patents-in-Suit except in the State of Texas as appropriate under the law.

14. Continental Circuits has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit. On information and belief, prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

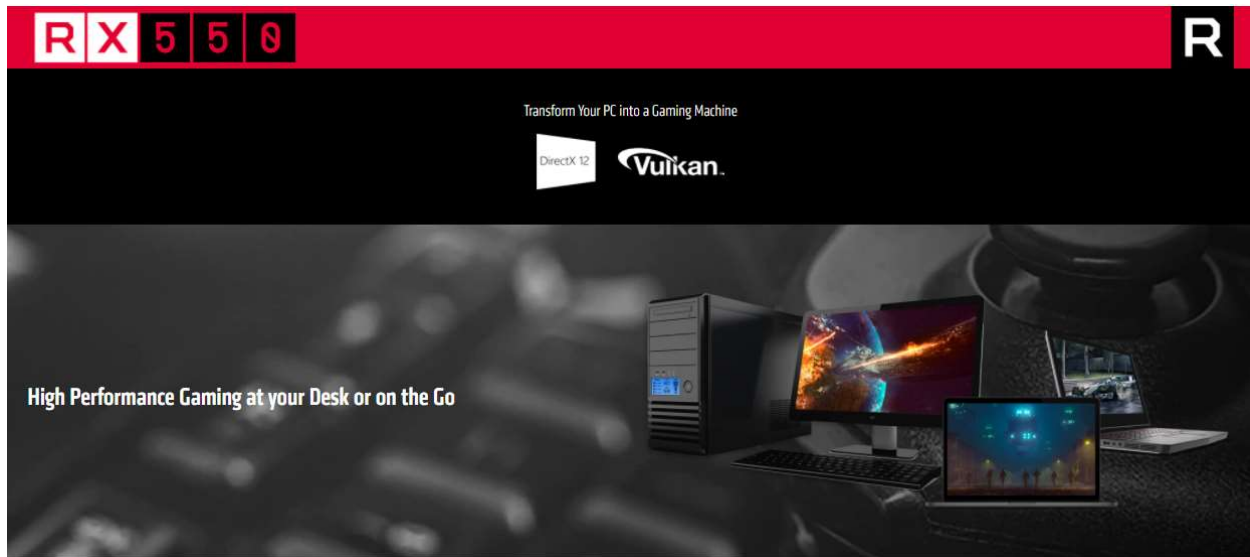
FACTUAL ALLEGATIONS

15. The Patents-in-Suit generally cover systems and methods for multilayer electrical devices, such as a circuit board, having a roughened surface structure for joining at least one of the layers. The inventions described in the Patents-in-Suit were developed by Brian McDermott, Daniel McGown, Ralph Leo Spotts, Jr., and Sid Tryzbiak, employees of Continental Circuits Inc. For example, this technology is implemented in processors. Infringing products include processors and/or associated methods of making processors for use in laptops, desktops, servers, smartphones, graphics cards, and similar devices including, but not limited to, the AMD Radeon series Graphics Processing Units and the AMD Opteron series processors (the “Accused Products”).

16. AMD has infringed the Patents-in-Suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import processors, that infringe the Patents-in-Suit. Upon information and belief, AMD processors were used in laptops, computers, and graphics cards during the terms of the Patents-in-Suit.

17. Upon information and belief, infringing AMD Radeon series processors were used in graphics cards during the terms of the Patents-in-Suit:¹

¹ See, e.g., <https://www.amd.com/en/products/graphics/radeon-rx-550>



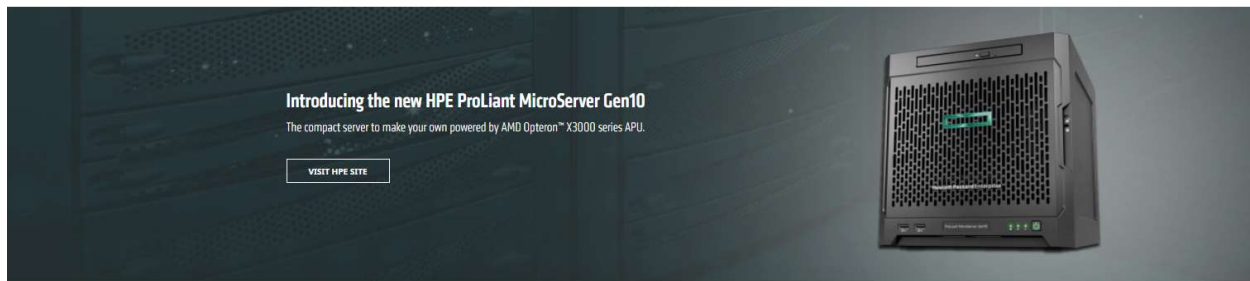
Radeon™ RX 550			
GPU	Boost Frequency: Up to 1183 MHz	Max Performance: Up to 1.2 TFLOPs	
Requirements	Typical Board Power (Desktop): 50 W	Minimum PSU Recommendation: 400 W	
GPU Memory	Memory Speed: 7 Gbps Memory Interface: 128-bit	Max Memory Size: 4 GB Memory Bandwidth: Up to 112 GB/s	Memory Type: GDDR5
Supported Rendering Format	HDMI™ 4K Support: Yes H265/HEVC Decode: Yes	4K H264 Decode: Yes H265/HEVC Encode: Yes	4K H264 Encode: Yes
Connectivity	DisplayPort: 1.4 HDR VGA: No	Dual Link DVI: Yes	HDMI™: 4K60 Support
Features	Supported Technologies AMD Radeon™ Software 4th Gen GCN Architecture DirectX® 12 Technology AMD Frame Rate Target Control OpenGL 4.5 Unified Video Decoder (UVD) The Vulkan® API	AMD FreeSync™ Technology AMD Radeon™ Chill AMD EyeFinity Technology (Gaming) 3rd Gen 14nm Process Technology AMD PowerTune Technology Video Code Engine (VCE)	AMD LiquidVR™ Technology AMD Radeon™ ReLive AMD App Acceleration OpenCL® 2.0 TrueAudio Next AMD Virtual Super Resolution
General	Product Family: Radeon™ 500 Series Launch Date: 4/18/2017	Product Line: Radeon™ RX 500 Series OS Support: Windows 10 - 64-Bit Edition Windows 7 - 32-Bit Edition Windows 7 - 64-Bit Edition Ubuntu 18.04 64-Bit Linux 4.8.6_64	Type: Component

*GPU specifications may vary by partner configuration. Please refer to partner websites for GPU specifications.

18. Upon information and belief, the AMD Opteron series processors were used in servers and workstations during the terms of the Patents-in-Suit:²

² <https://www.amd.com/en/opteron>

Opteron™ X and A-Series Processors



AMD Opteron™ X3000 Series APUs - An ideal solution for both personal and small business needs

Expanding on the success of AMD Opteron™ x86 APU SoC models X2150 and X2170 - the AMD Opteron™ X3000 series APUs are a family of fully integrated CPU, GPU, and I/O in a power efficient package, optimized to provide excellent processing and graphics performance, making it an ideal solution for both personal and small business solutions

- Featuring 3rd Generation Graphics Core Next (GCN) Architecture
- TDP ranging from 12-35W
- Highly integrated x86 SoC for emerging multimedia-oriented workloads

Target Workloads:

- SOHO & Media Storage
- File/Print & NW Gateway
- Media Classroom & Gaming
- Digital Signage, CCTV & Surveillance

AMD Opteron™ X3421

- CPU Core Count - 4
- CPU Core Frequency (Base - Max Boost) - 2.1 - 3.4 GHz
- GPU CU Count - 8
- GPU Frequency (Max) - 800 MHz
- cTDP Range - 12-35W
- Max DDR4 Speed - 2400 MHz
- L2 Cache - 2MB

AMD Opteron™ X3216

- CPU Core Count - 2
- CPU Core Frequency (Base - Max Boost) - 1.6 - 3.0 GHz
- GPU CU Count - 4
- GPU Frequency (Max) - 800 MHz
- cTDP Range - 12-15W
- Max DDR4 Speed - 1600 MHz
- L2 Cache - 1MB

19. In 2005, the then-owner of the Patents-in-Suit sent a letter to AMD informing them of the family of patents that includes the Patents-in-Suit and seeking to open license negotiations. Despite the then-owner's efforts, no license was executed.

20. On information and belief, AMD has been aware of the Patents-in-Suit, and its infringement thereof, since each patent issued.

COUNT I **(Infringement of the '582 Patent)**

21. Paragraphs 1 through 20 are incorporated by reference as if fully set forth herein.

22. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '582 Patent.

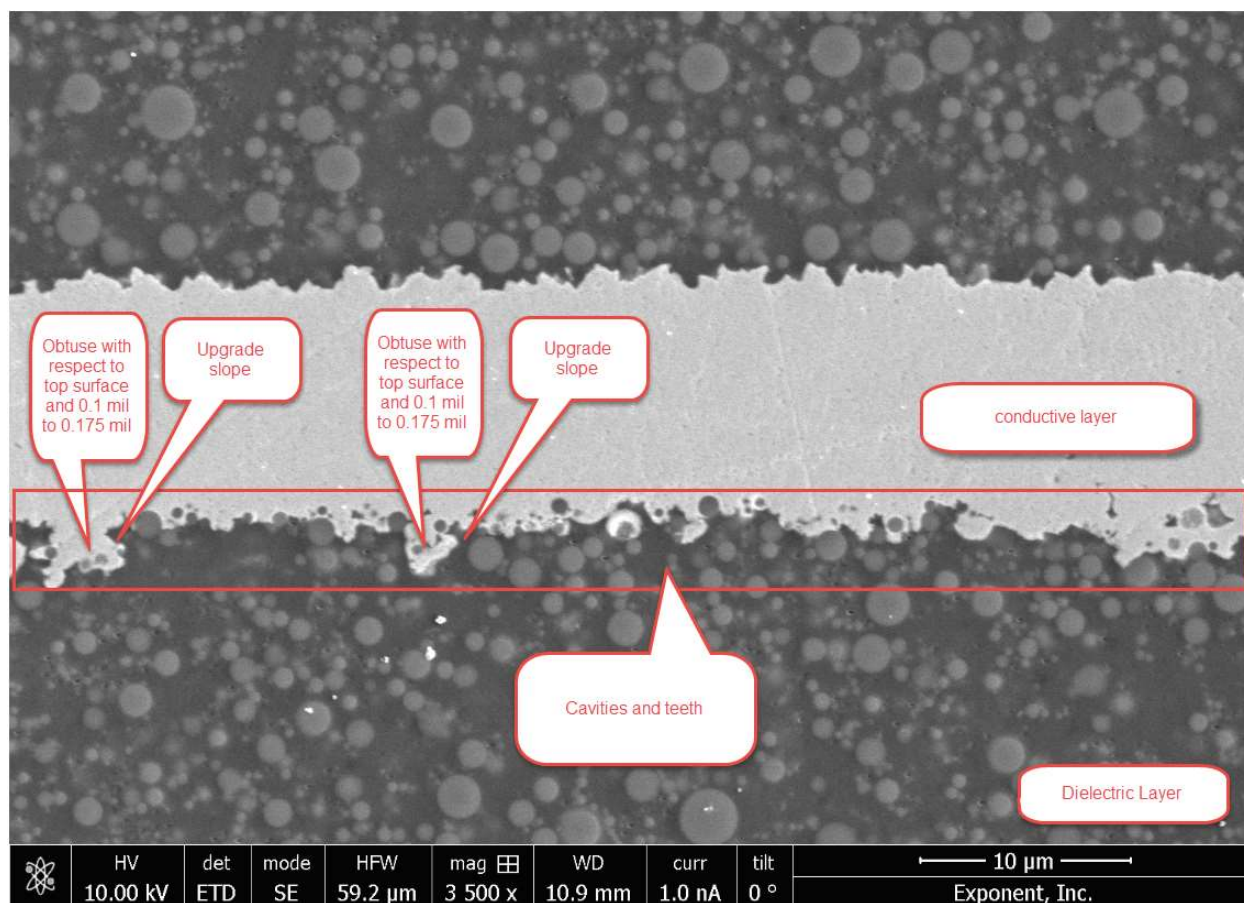
23. Defendant has directly infringed the '582 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every

limitation of one or more claims of the '582 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the AMD Radeon and AMD Opteron series graphics processing units and processors.

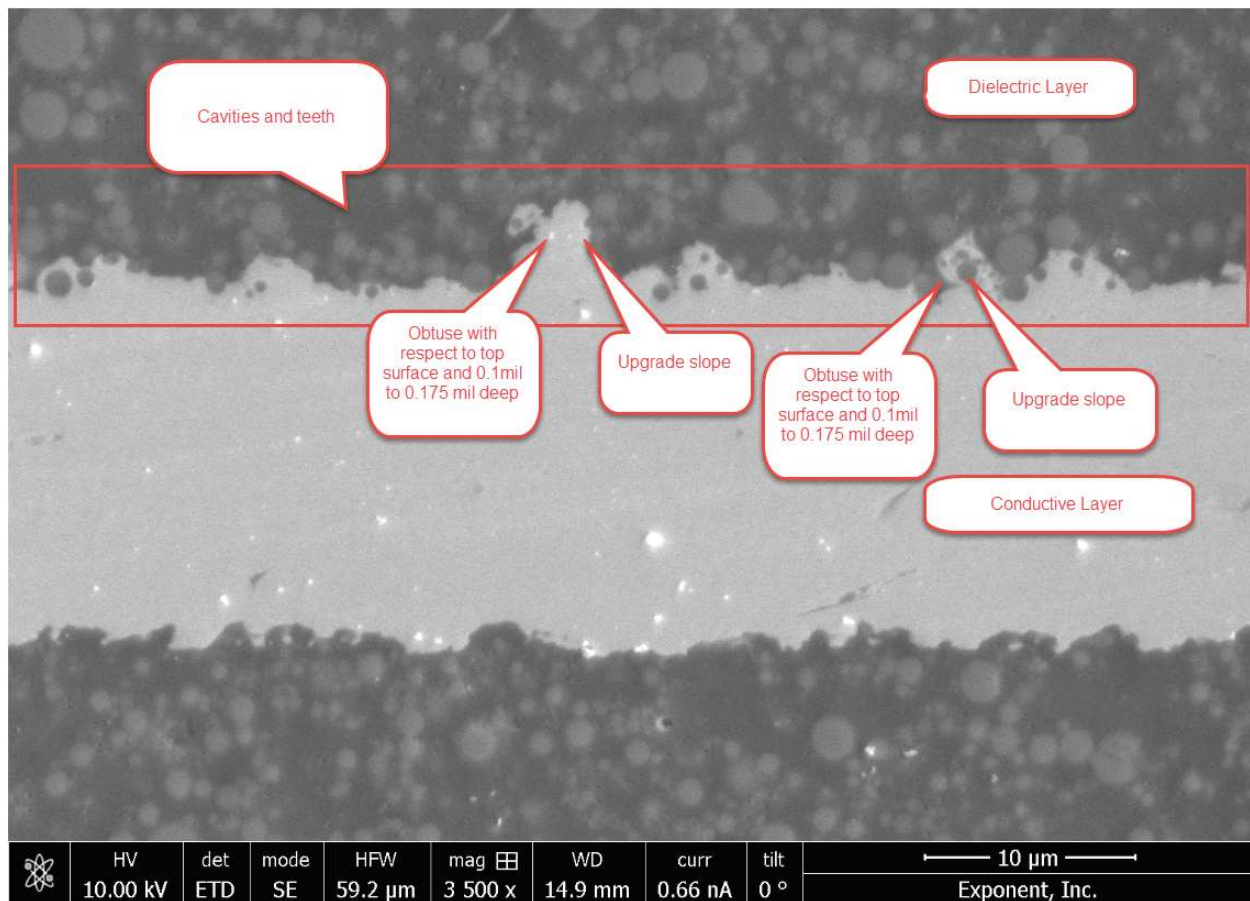
24. For example, Defendant has infringed at least claim 83 of the '582 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which comprise electrical devices included in multilayer electric devices, products, and/or circuit boards.

25. Upon information and belief, each Accused Product comprises a dielectric material comprising a surface with cavities remaining from removal of a portion of the dielectric material.

26. Upon information and belief, each Accused Product comprises a conductive layer built up on the dielectric material that fills the cavities and forms teeth set in and under the surface of the dielectric material.



SEM image of Accused AMD Opteron with exemplary annotations



SEM image of Accused AMD Radeon with exemplary annotations

27. Upon information and belief, the conductive layer comprises a portion of the circuitry of an electrical device, and a plurality of the cavities are obtuse with respect to the top surface and are at least 1 tenth of a mil deep to 1.75 tenths of a mil deep.

28. Upon information and belief at least one of the cavities includes an upgrade slope with respect to the surface of the dielectric material, and one of the teeth engages a portion of the dielectric material at the slope.

29. Because of Defendant's infringement of the '582 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

30. Defendant has committed acts of infringement that Defendant actually knew or should have known constituted an unjustifiable high risk of infringement of at least one valid and

enforceable claim of the '582 Patent. Defendant's infringement of the '582 Patent has been willful, intentional, deliberate, and/or in conscious disregard of Continental Circuit's rights under the patent. Continental Circuits is entitled to an award of treble damages, reasonable attorney fees, and costs in bringing this action.

COUNT II
(Infringement of the '560 Patent)

31. Paragraphs 1 through 20 are incorporated by reference as if fully set forth herein.

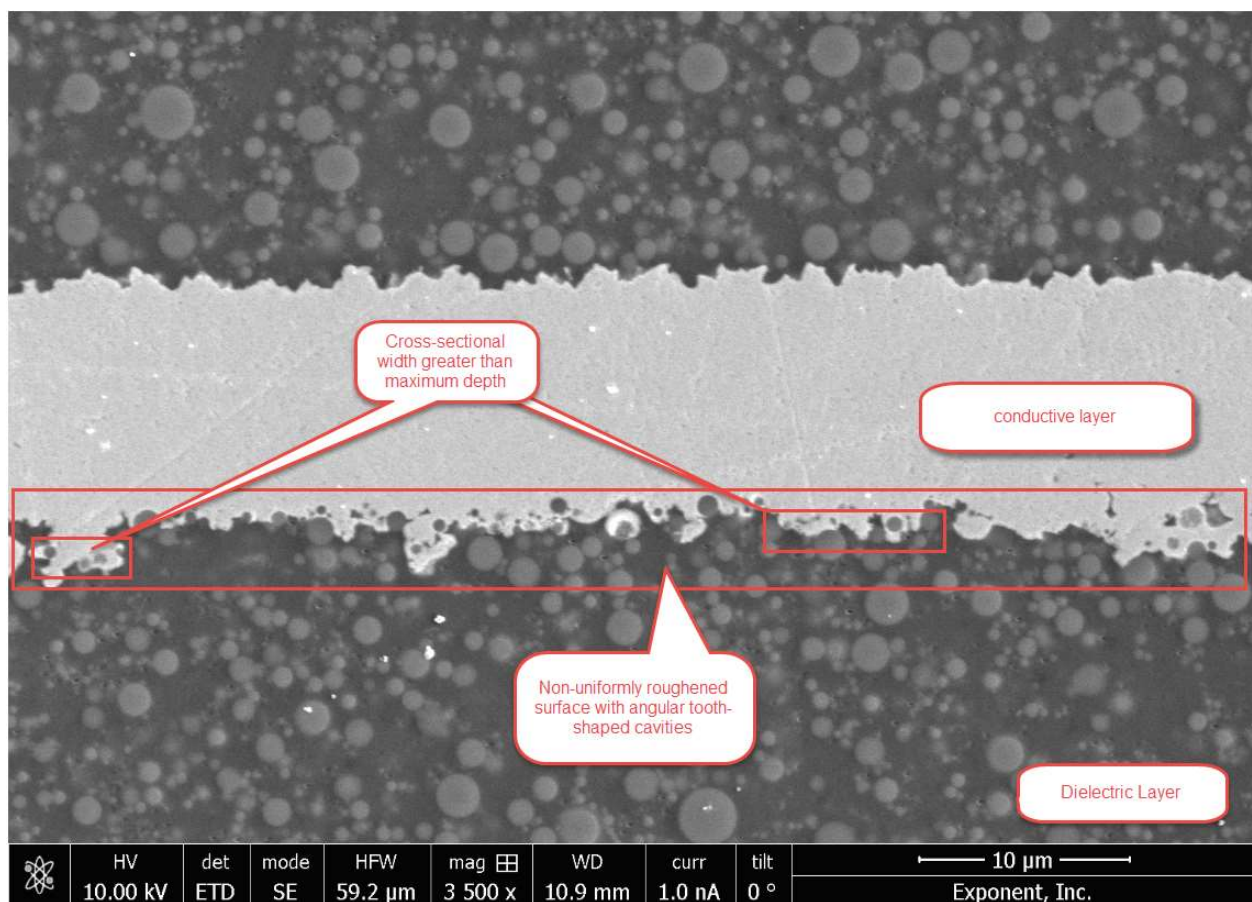
32. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '560 Patent.

33. Defendant has directly infringed the '560 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '560 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the AMD Radeon and AMD Opteron series graphics processing units and processors.

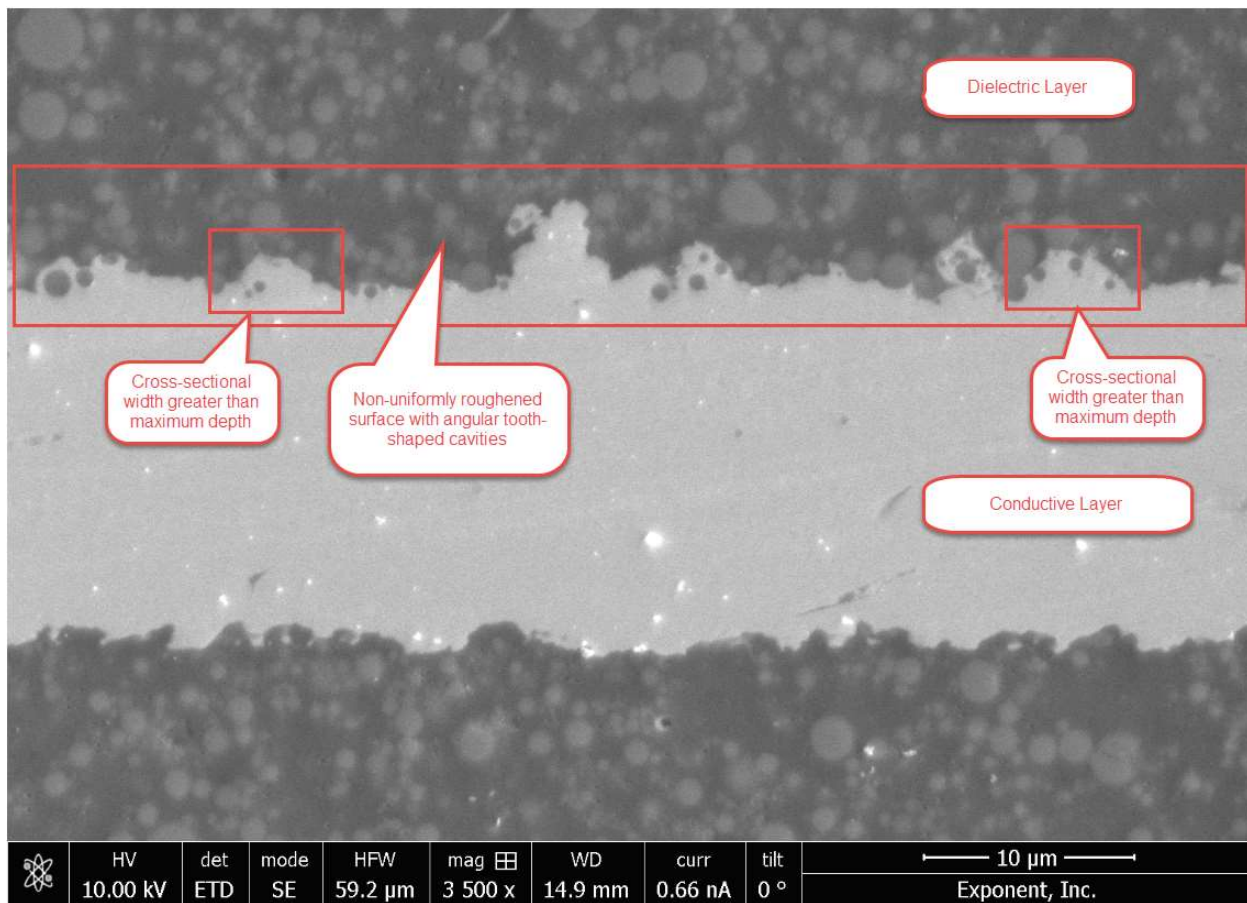
34. For example, Defendant has directly infringed at least claim 1 of the '560 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which comprise an article of manufacture.

35. Upon information and belief, the Accused Products comprise an epoxy dielectric material delivered with solid content sufficient that etching the epoxy forms a non-uniformly roughened surface of angular tooth-shaped cavities located in and underneath an initial surface of the dielectric material, sufficient that the etching of the epoxy uses non-homogeneity with the solid content in bringing about formation of the non-uniformly roughened surface of the angular tooth-

shaped cavities and sufficient that the etching of the epoxy is such that a plurality of the cavities have a cross-sectional width that is greater than a maximum depth with respect to the initial surface, wherein the etching forms the non-uniformly roughened surface of angular tooth-shaped cavities, and a conductive material, a portion of the conductive material in the cavities thereby forming angular teeth in the cavities, and wherein the conductive material forms a portion of circuitry of an electrical device.



SEM image of Accused AMD Opteron with exemplary annotations



SEM image of Accused AMD Radeon with exemplary annotations

36. Because of Defendant's infringement of the '560 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

37. Defendant has committed acts of infringement that Defendant actually knew or should have known constituted an unjustifiable high risk of infringement of at least one valid and enforceable claim of the '560 Patent. Defendant's infringement of the '560 Patent has been willful, intentional, deliberate, and/or in conscious disregard of Continental Circuit's rights under the patent. Continental Circuits is entitled to an award of treble damages, reasonable attorney fees, and costs in bringing this action.

COUNT III
(Infringement of the '105 Patent)

38. Paragraphs 1 through 20 are incorporated by reference as if fully set forth herein.

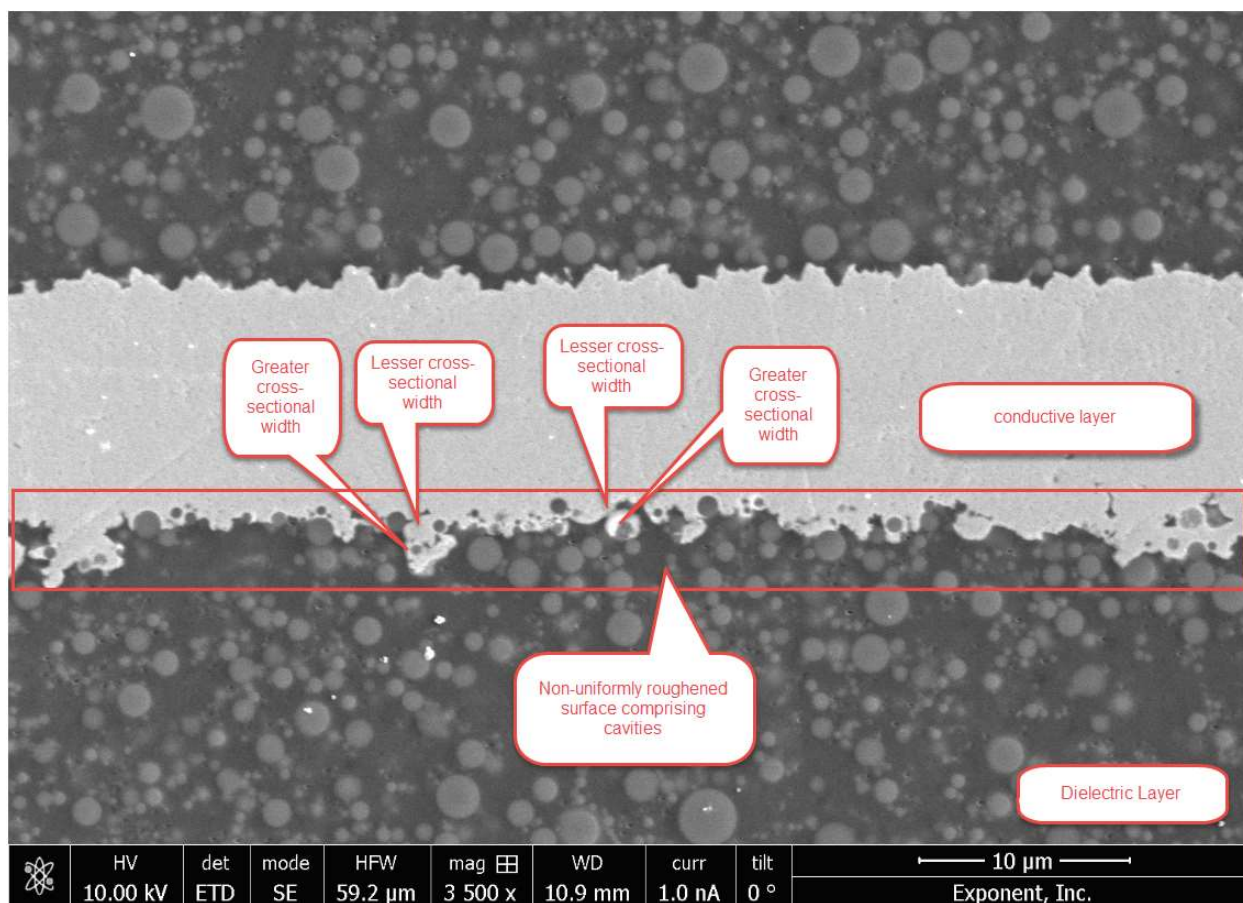
39. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '105 Patent.

40. Defendant has directly infringed the '105 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '105 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the AMD Radeon and AMD Opteron series graphics processing units and processors.

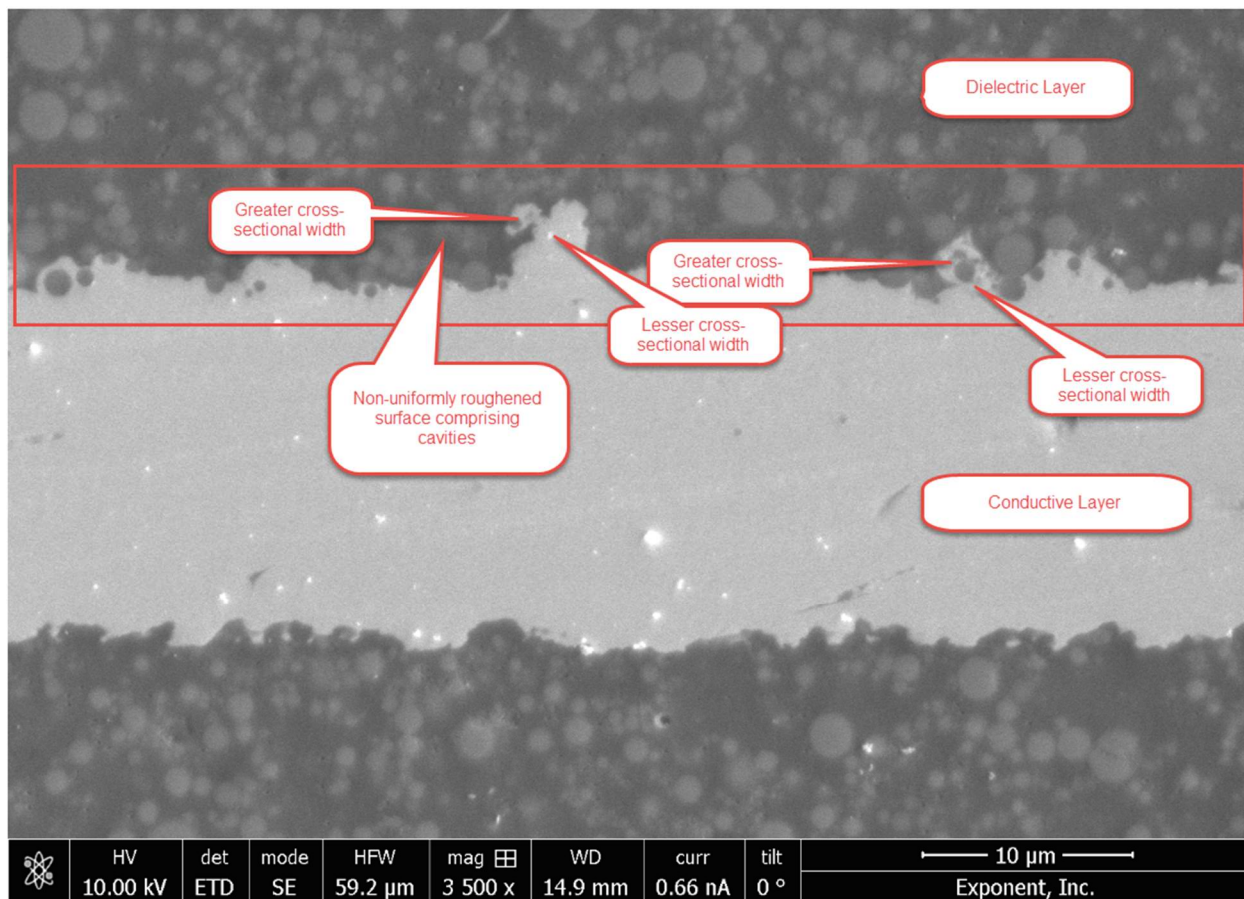
41. For example, Defendant has directly infringed at least claim 80 of the '105 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which are multilayer electric devices, products, and/or circuit boards.

42. Upon information and belief, the Accused Products comprise circuitry with conductive material being part of the circuitry and configured as angular teeth in filling cavities.

43. Upon information and belief, the Accused Products comprise an epoxy dielectric material disposed in combination with the circuitry and coupled with the conductive material in a configuration where the dielectric material comprises a non-uniformly roughened surface comprising cavities located in and underneath an initial surface of the dielectric material delivered with solid content being non-homogeneous and configured to bring about the formation of the non-uniformly roughened surface by etching of the epoxy.



SEM image of Accused AMD Opteron with exemplary annotations



SEM image of Accused AMD Radeon with exemplary annotations

44. Upon information and belief, at least some of the cavities of the Accused Products have a first cross-sectional distance proximate the initial surface, and a substantially greater cross-sectional distance distant from the initial surface.

45. Because of Defendant's infringement of the '105 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

46. Defendant has committed acts of infringement that Defendant actually knew or should have known constituted an unjustifiable high risk of infringement of at least one valid and enforceable claim of the '105 Patent. Defendant's infringement of the '105 Patent has been willful, intentional, deliberate, and/or in conscious disregard of Continental Circuit's rights under the patent. Continental Circuits is entitled to an award of treble damages, reasonable attorney fees,

and costs in bringing this action.

COUNT IV
(Infringement of the '912 Patent)

47. Paragraphs 1 through 20 are incorporated by reference as if fully set forth herein.

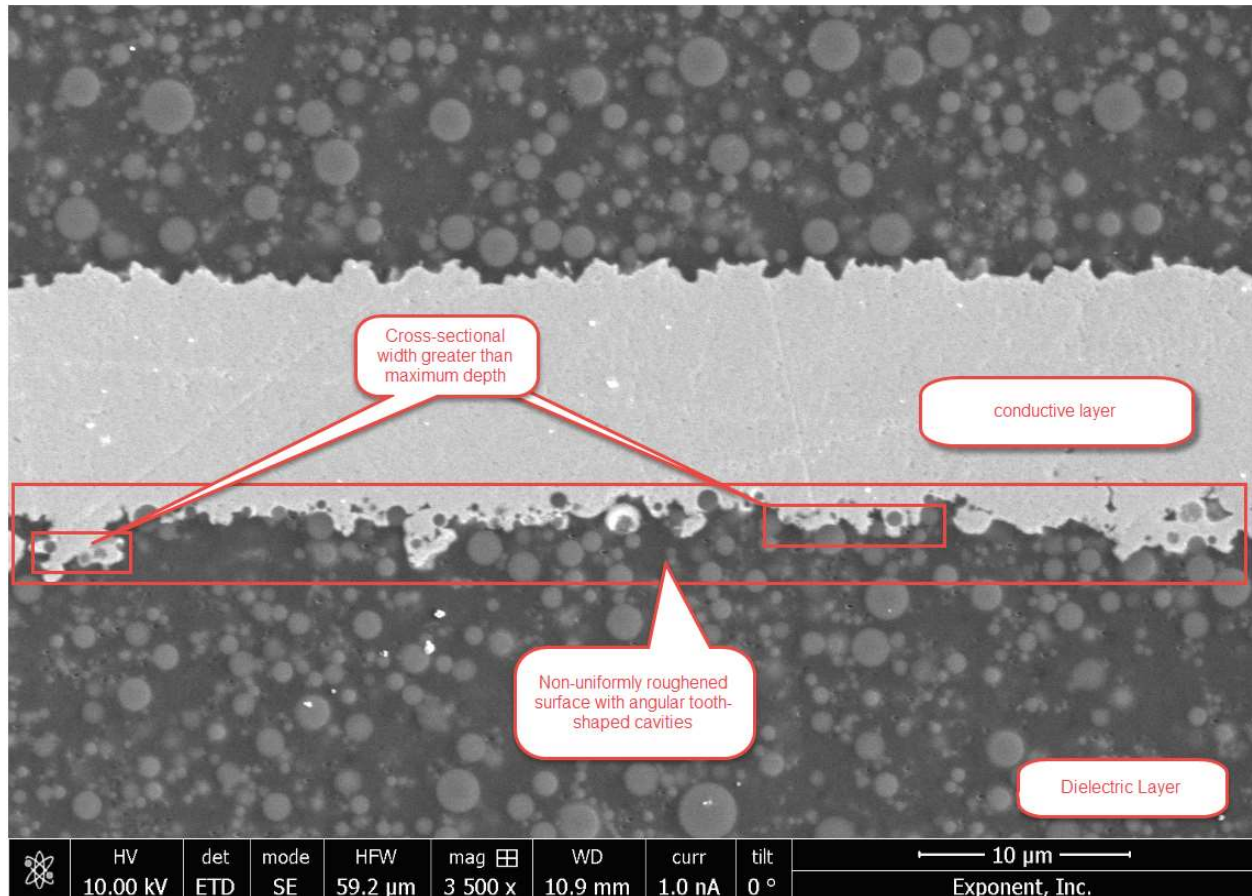
48. Continental Circuits has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '912 Patent.

49. Defendant has directly infringed the '912 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '912 Patent. Such products include but are not limited to processors, that were included in multilayer electric devices, products, and/or a circuit board. On information and belief, infringing products include at least the AMD Radeon and AMD Opteron series graphics processing units and processors.

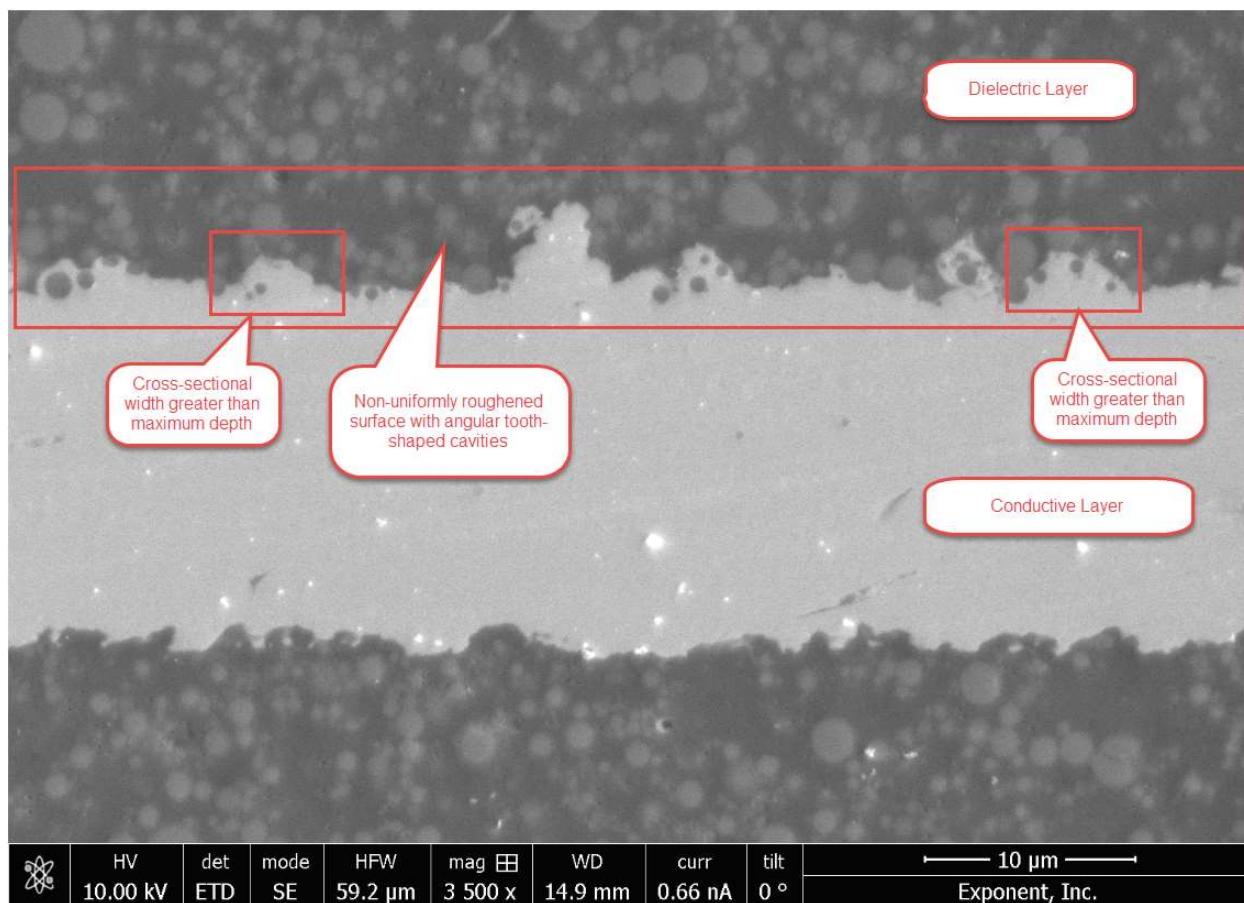
50. For example, Defendant has directly infringed at least claim 17 of the '912 Patent by making, using, offering to sell, selling, and/or importing into the United States the Accused Products which are products produced by the process of claim 1 of the '912 Patent.

51. Upon information and belief, the Accused Products are made by implementing a circuit design for an electrical device by coupling a dielectric material delivered with solid content, the dielectric material and the solid content being non-homogeneous materials sufficient that etching the dielectric material forms a non-uniformly roughened surface of cavities located in, and underneath an initial surface of, the dielectric material, sufficient that the etching of the dielectric material uses non-homogeneity with the solid content in bringing about formation of the non-uniformly roughened surface of the cavities and sufficient that the etching of the dielectric material is such that a plurality of the cavities have a cross-sectional width that is greater than a maximum

depth with respect to the initial surface, wherein the etching forms the non-uniformly roughened surface of cavities, with a conductive material, a portion of the conductive material in the cavities thereby forming numerous sized and shaped teeth in the cavities, in circuitry of the electrical device.



SEM image of Accused AMD Opteron with exemplary annotations



SEM image of Accused AMD Radeon with exemplary annotations

52. Because of Defendant's infringement of the '912 Patent, Continental Circuits has suffered damages in an amount to be proved at trial.

53. Defendant has committed acts of infringement that Defendant actually knew or should have known constituted an unjustifiable high risk of infringement of at least one valid and enforceable claim of the '912 Patent. Defendant's infringement of the '912 Patent has been willful, intentional, deliberate, and/or in conscious disregard of Continental Circuit's rights under the patent. Continental Circuits is entitled to an award of treble damages, reasonable attorney fees, and costs in bringing this action.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Continental Circuits prays for relief against Defendant as follows:

- a. Entry of judgment declaring that Defendant infringed one or more claims of each of the Patents-in-Suit;
- b. Entry of judgment declaring that Defendant's infringement of the Patents-in-Suit was willful;
- c. An order awarding damages sufficient to compensate Continental Circuits for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with pre-judgment and post-judgment interest and costs;
- d. Enhanced damages pursuant to 35 U.S.C. § 284;
- e. Entry of judgment declaring that this case is exceptional and awarding Continental Circuits its costs and reasonable attorney fees under 35 U.S.C. § 285;
- f. An accounting for acts of infringement;
- g. Such other equitable relief which may be requested and to which Plaintiff is entitled; and
- h. Such other and further relief as the Court deems just and proper.

Dated: May 28, 2021

Respectfully submitted,

/s/ Raymond W. Mort, III

Raymond W. Mort, III

Texas State Bar No. 00791308

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ATTORNEYS FOR PLAINTIFFS

CONTINENTAL CIRCUITS LLC AND

CONTINENTAL CIRCUITS OF TEXAS LLC